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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/626,655 | 07/25/2003 | Kazuya Yoneyama | 25-252 | 1407 |

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EXAMINER

SEVER, ANDREW T

ART UNIT PAPER NUMBER

2851

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,655

Applicant(s)

YONEYAMA ET AL.

Examiner

Andrew T Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the Philips prism for separating light from the illumination optical system into three colors combined with three polarized beam splitters must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Neither figure 4 or figure 5 shows this; figure 4 has the Philips prism separating the light, but only one polarized beam splitter. Figure 5 has the light separated before entering the figure and each separate color beam entering its own individual polarized beam splitter (light beams La, Lc, Lb) which is not what is claimed in applicant's claims 9-12.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As described above in the objection to the drawings neither the second embodiment (figure 4) nor the third embodiment (figure 5) correspond to what is claimed in claims 9-12. Applicant does not teach what is claimed nor show it in a figure. One of ordinary skill in the art would not be able to make and/or use the invention with out undo experimentation, since applicant has not disclosed how the modulated light passes from the polarization beams splitters to the singular projection lens. (No means for combining the light is disclosed.) Accordingly claims 9-12 are not enabled and no-prior art rejection will be provided.

If applicant was attempting to claim the third embodiment, the applicant is strongly advised to review figure 10 of US 6,010,221 of Maki et al. which would have been used (if it had been properly claimed) in a 35 USC 103 rejection of applicant's third embodiment with the reference cited in the following 35 USC 102 rejection of claims 1-8 and 13-20.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-8 and 13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Aastuen et al. (US 6,672,721.)

Aastuen teaches in figure 15 a polarized beam splitter comprising:

A first prism (1502) that includes a first surface (surface where the light 1508 enters the prism) and a second surface (surface where the arrow on light 1508 reflects off of) inclined with respect to said first surface;

A second prism (1504) that includes a third surface (surface that has the Greek letter alpha literally pointing too) that faces said second surface; and

An intermediate layer (1506 and 1514) between said second surface and said third surface that includes an adhesive layer that bonds said first prism to said second prism and that includes a polarized light separating membrane (column 16 lines 52-59 teaches that surface 1514 is optical adhesive and 1506 is a polarized light separating membrane);

Wherein the intermediate layer is wedge-shaped with the thicker part of the wedge being located farther from said first surface than is the thinner part of the wedge so that transmission of a light beam that is incident on said first surface and which thereafter transits through the intermediate layer compensates for astigmatism of the light beam

caused by the inclination of said second surface with respect to said first surface (see column 16 lines 40-51 which teaches the purpose of the wedge is for astigmatism correction.)

With regards to applicant's claim 2:

See column 2 lines 36-58 which teach that the astigmatism compensating elements (including the wedge of figure 15) are provided to compensate for the astigmatism caused by the polarization beam splitter, which would inherently include that caused by the inclination of the second surface.

With regards to applicant's claims 3 and 4:

See column 14 lines 11-39, which give sample index of refractions for various materials that, can be used in making both the prism and adhesives. For example adhesive layer of 1.56 and glass of 1.85, which satisfies the claimed condition of claims 3 and 4. With regards to applicant's claims 17-19 Aastuen teaches to further compensate for astigmatism adding a 3.8mm thick layer of PBH71 glass to the adhesive layer for an index of refraction of 1.92 which meets the claimed conditions of claims 17-18.

With regards to applicant's claims 5-8 and 13-16, and 20 :

Aastuen teaches in figures 1 and 2 projection systems in which the astigmatism reducing prisms (including the one of figure 15) are used. Figure 1 showing a projector having a single modulator (126) with a time-sharing color separating system (122 see column 5

line 2 which teaches that 122 may include optics which change the spectrum of the light which inherently would include a time-sharing color separating system such as a color wheel or other well known time-sharing color separating system as is known to be necessary in a single modulator projection system) and a projection lens (128) as is claimed by applicant's claims 5-8. Figure 2 shows a projector having three modulators (226, 228, and 230) and a Philips prism (236) which receives the light from the astigmatism reducing prism (such as the one taught in figure 15) and devices the light into three colors and directs it towards three modulators and then recombines the modulated light and directs it back to the prism and from there to a projection lens (234) as is claimed in applicant's claims 13-16.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,685,322 to Sawamura et al. teaches in figures 3 and 4 a wedge shaped gap in a polarization beam splitter which could read on applicant's claim 1.

US 5,727,860 to Broer et al. teaches in figure 5 a wedge shape beam diverter filled with a polymer (63).

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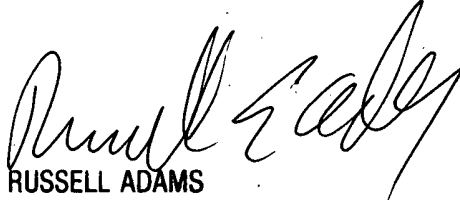
US 5,418,769 to Inoue teaches in figures 4-7 a beamsplitter which includes a wedge (B) in the middle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


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